Amendments to the Claims

Please add new claims 21-28, as follows:

21. A constrained-envelope digital communications transmitter circuit comprising:

a pulse-spreading filter configured to receive a quadrature phase-point signal stream of digitized quadrature phase points and produce a filtered signal stream, said filtered signal stream exhibiting energy corresponding to each phase point spread throughout a plurality of unit baud intervals;

a constrained-envelope generator coupled to said pulse-spreading filter and configured to produce a constrained-bandwidth error signal stream;

a combining circuit coupled to said pulse-spreading filter and to said constrained-envelope generator, said combining circuit configured to combine said filtered signal stream and said constrained-bandwidth error signal stream to produce a constrained-envelope signal stream;

a digital linearizer coupled to said combining circuit and configured to pre-distort said constrained-envelope signal stream into a pre-distorted digital signal stream;

a digital-to-analog converter coupled to said digital linearizer and configured to produce an analog baseband signal from said pre-distorted digital signal stream; and

a radio-frequency amplifying circuit configured to generate a radio-frequency broadcast signal from said analog baseband signal.

22. A digital communications transmitter circuit as claimed in claim 21 wherein said pulse-spreading filter is a Nyquist-type filter.

23.   A digital communications transmitter circuit as claimed in claim 21 wherein said combining circuit is configured to combine said filtered signal stream and said constrained-bandwidth error signal stream to reduce a peak magnitude component of said filtered signal stream.

24.   A digital communications transmitter circuit as claimed in claim 21 wherein:
said pulse-spreading filter is a first pulse-spreading filter;
said transmitter circuit additionally comprises a delay element coupled between said first pulse-spreading filter and said combining circuit; and
said constrained-envelope generator comprises a second pulse-spreading filter coupled to said combining circuit.

25.   A digital communications transmitter circuit as claimed in claim 24 wherein:
said first pulse-spreading filter is configured so that each phase point is transformed into a Nyquist-type datum burst extending over a plurality of unit baud intervals, having a datum-burst peak value occurring in one of said plurality of unit baud intervals and datum-burst zero values occurring substantially at integral unit baud intervals away from said datum-burst peak value, so that said filtered signal stream in each unit baud interval substantially equals the sum of said Nyquist-type datum bursts from a plurality of phase points; and
said constrained-envelope generator is configured so that said second pulse-spreading filter receives error pulses, transforms each error pulse into a Nyquist-type error burst extending over a plurality of unit baud intervals, having an error-burst peak value occurring in one of said plurality of unit baud intervals and error-burst zero values occurring substantially

at integral unit baud intervals away from said error-burst peak value, so that said constrained-bandwidth error signal stream in each unit baud interval substantially equals the sum of said Nyquist-type error bursts from a plurality of error pulses.

26.   A digital communications transmitter circuit as claimed in claim 21 wherein:

said filtered signal stream is a stream of complex digital values, with each of said complex digital values exhibiting a peak magnitude component; and

said constrained-envelope generator is configured to determine when ones of said peak magnitude components exceed a threshold value.

27.   A digital communications transmitter circuit as claimed in claim 26 wherein:

said transmitter circuit additionally comprises a phase mapper coupled to said pulse-spreading filter and configured to select said digitized quadrature phase points from a phase-point constellation, said phase-point constellation having a maximum-magnitude phase point; and

said threshold value is a magnitude value approximately equal to a magnitude of said maximum-magnitude phase point.

28.   A digital communications transmitter circuit as claimed in claim 21 additionally comprising an interleaver coupled to said phase mapper.

Status of All Patent Claims

1.	Pending	20.	Pending
2.	Pending	21.	Pending
3.	Pending	22.	Pending
4.	Pending	23.	Pending
5.	Pending	24.	Pending
6.	Pending	25.	Pending
7.	Pending	26.	Pending
8.	Pending	27.	Pending
9.	Pending	28.	Pending
10.	Pending		
11.	Pending		
12.	Pending		
13.	Pending		
14.	Pending		
15.	Pending		
16.	Pending		
17.	Pending		
18.	Pending		
19.	Pending		

Explanation of Support for Claim Changes

Claim 21:

Claim 21 is a new claim that finds support in claim 11, as amended in the preliminary amendment. In addition, support may be found in Fig. 2 at items 148, 150, and 152. And, support may be found at column 14 lines 4-36. Support for the pulse-spreading filter element may be found at item 76 in Fig. 2 and at column 6 line 65 through column 7 line 28.

Claim 22:

Claim 22 is a new claim that finds support at column 6 line 65 through column 7 line 28.

Claim 23:

Claim 23 is a new claim that finds support in Fig. 2 and at column 9 lines 47-65.

Claim 24:

Claim 24 is a new claim that finds support in Fig. 2 and at column 12 lines 21-34.

Claim 25:

Claim 25 is a new claim that finds support in Fig. 2 and at column 12 lines 21-45.

Claim 26:

Claim 26 is a new claim that finds support in originally-filed claims 9 and 10, Figs. 2 and 4, and at column 9 line 66 through column 10 line 39.

Claim 27:

Claim 27 is a new claim that finds support in Figs. 2-4, at column 5 lines 1-46, and at column 9 line 66 through column 10 line 39.

Claim 28:

Claim 28 is a new claim that finds support in Fig. 2 and at column 4 lines 51-67.